

Keystone Do Nows

Monday, August 27, 2012 – September ¹¹~~7~~, 2012

Name: _____ Period: _____

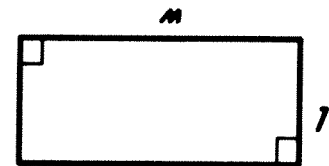
Keystone Formula Review

Arithmetic Properties

<p>Identity Property</p> $a + 0 = a$ $a \cdot 1 = a$ $5 + 0 = \boxed{5}$ $7 + \boxed{0} = 7$ $8 \cdot \boxed{1} = 8$	<p>Distributive Property</p> $a \cdot (b + c) = a \cdot b + a \cdot c$ $7(x + 9) = \boxed{7x + 63}$ $x(3 + y) = \boxed{3x + xy}$	<p>Multiplicative Property of Zero</p> $a \cdot 0 = 0$ $5,398,280,411,003 \cdot 0 = \boxed{0}$	<p>Additive Property of Equality</p> <p>If $a = b$, then</p> $a + c = b + c$ <p>Show your steps as you solve the problem. Make sure you show the step that includes the "Additive Property of Equality."</p> $x - 7 = 3$ $x - 7 + 7 = 3 + 7$ $x = 10$	<p>Multiplicative Property of Equality</p> <p>If $a = b$, then</p> $a \cdot c = b \cdot c$ <p>Show your steps as you solve the problem. Make sure you show the step that includes the "Multiplicative Property of Equality."</p> $\frac{1}{3}x = 5$ $3(\frac{1}{3}x) = 3 \cdot 5$ $x = 15$
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$$A = l \cdot w$$

The area is:



Given:

What is the area of a room that is 16 feet by 12 feet?

$$A = 16 \cdot 12$$

$$= 192 \text{ ft}^2$$

Use your formula sheet to fill in the properties and complete the examples.

Additive Inverse	$a + (-a) = 0$	$6 + \boxed{-6} = 0$ $\boxed{11} - 11 = 0$	$\boxed{-5} + 5 = 0$ $-7 - \boxed{7} = 0$
Multiplicative Inverse	$a \cdot \frac{1}{a} = 1$	$\boxed{3} \cdot \frac{1}{3} = 1$ $7 \cdot \boxed{\frac{1}{7}} = 1$	$-5 \cdot \boxed{-\frac{1}{5}} = 1$ $2^3 \cdot \boxed{\frac{1}{8}} = 1$
Commutative Property	$a + b = b + a$ $a \cdot b = b \cdot a$	$3(x + 5) = (x + 5) \boxed{3}$ $7 + x = x + \boxed{}$	$x \cdot 3 = \boxed{3 \cdot x}$
Associative Property	$(a + b) + c = a + (b + c)$ $(a \cdot b) \cdot c = a \cdot (b \cdot c)$	$(3 + x) - 5 = \boxed{3 + (x - 5)}$ $3 \cdot (5x) = \boxed{(3 \cdot 5)x}$	



The area of a classroom is 800 square feet. If the width is 25 feet, what is the length?

$$\begin{aligned}
 A &= l \cdot w \\
 800 &= l \cdot 25 \\
 \frac{800}{25} &= \frac{25l}{25} \\
 32 &= l \\
 l &= 32 \text{ feet}
 \end{aligned}$$

Area of a Rectangle

Slope

So find the slope, you find the difference in the y-values and put it over the difference in the x-values

5. Explain how you find slope given two distinct points.

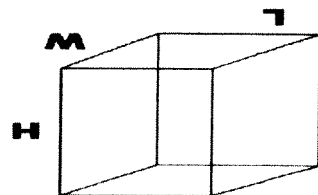
4. (5, -1) and (5, 2) $m = \frac{-1-2}{5-5} = \frac{-3}{0} = \text{undefined}$

3. (-4, 3) and (7, 3) $m = \frac{3-3}{7-(-4)} = \frac{0}{11} = 0$

2. (-4, 3) and (5, -6) $m = \frac{3-(-6)}{-4-5} = \frac{3+6}{-4-5} = \frac{9}{-9} = -1$

1. (-5, -2) and (3, 8) $m = \frac{8-(-2)}{3-(-5)} = \frac{8+2}{3+5} = \frac{10}{8} = \frac{5}{4}$

Find the slope of the line that passes through the two points.



Given the rectangular prism:

The volume is:

$$V = l \cdot w \cdot h$$

Find the volume of a rectangular solid that has dimensions 5 x 12 x 8 inches.

$$V = 5 \cdot 12 \cdot 8$$

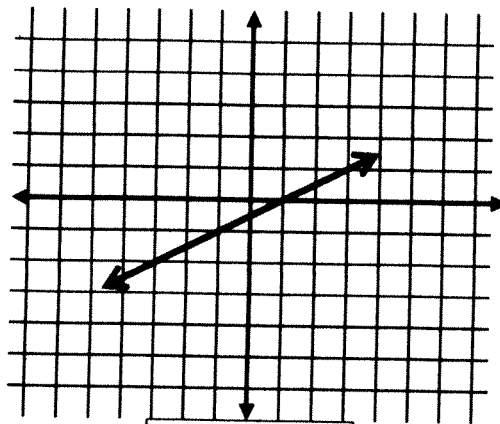
$$V = 480 \text{ in}^3$$

Slope = m

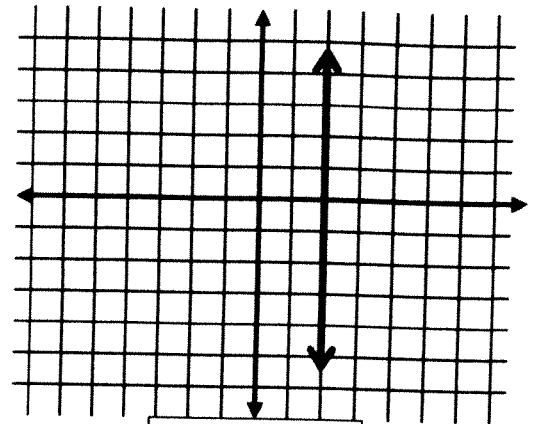
Find the slope of each of the graphs below.

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

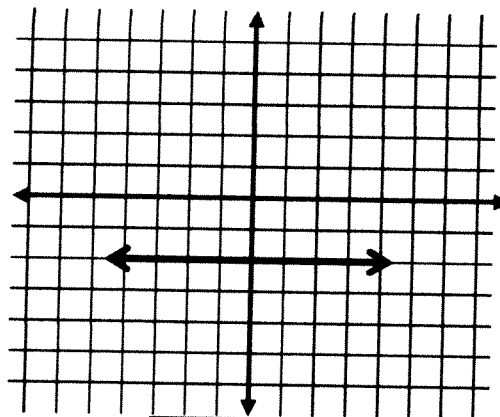
Slope is $\frac{\text{rise}}{\text{run}}$



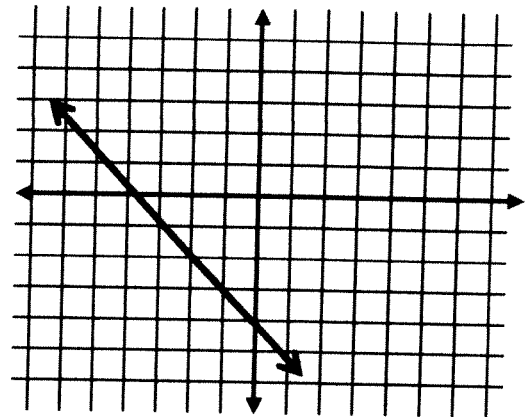
$$m = \frac{1}{2}$$



$$m = \text{undefined}$$

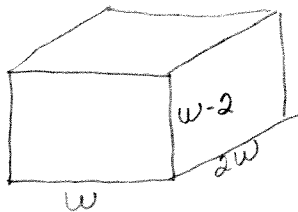


$$m = 0$$



$$m = -1$$

A shoe box has a volume of 490 cubic inches. The height of the shoe box is 2 inches less than the width and the length is twice the width. What are the dimensions of the shoe box if the height is 5 inches? Please show all of your work.



$$\begin{aligned} V &= 490 \text{ in}^3 \\ V &= l \cdot w \cdot h \\ V &= 2w \cdot w \cdot (w-2) \\ 490 &= 14 \cdot 7 \cdot 5 \end{aligned}$$

$$\begin{aligned} w-2 &= 5 \\ w &= 7 \end{aligned}$$

14 x 7 x 5 inches

Volume of a Rectangular Prism

The Standard Equation of a line is:

$$Ax + By = C$$

Given two points, find the slope and y-intercept. Write the equation of the line in standard form.

1. (6, -4) and (-3, 5)

$$m = \frac{5 - (-4)}{-3 - 6} = \frac{9}{-9} = -1$$

$$\boxed{\text{Slope} = -1}$$

$$\begin{aligned} y - (-4) &= -1(x - 6) \\ y + 4 &= -x + 6 \\ y &= -x + 2 \end{aligned}$$

$$\boxed{y\text{-intercept} = 2}$$

$$\boxed{x + y = 2}$$

Given points (7, 5) and (-3, 10), write the equation of the line in point-slope form.

$$m = \frac{10 - 5}{-3 - 7} = \frac{5}{-10} = -\frac{1}{2}$$

$$y - 5 = -\frac{1}{2}(x - 7)$$

Point-Slope Formula

Point Slope Formula

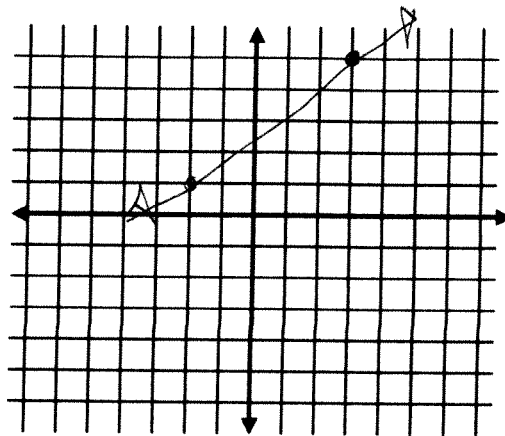
$$y - y_1 = m(x - x_1)$$

Given the points (3, 5) and (-2, 1), write in point-slope form and then graph the line.

$$m = \frac{5-1}{3-(-2)}$$

$$= \frac{4}{5}$$

$$y - 1 = \frac{4}{5}(x + 2)$$



2. (2, 7) and (1, -4)

$$m = \frac{-4-7}{1-2}$$

$$= \frac{-11}{-1}$$

$$= 11$$

Slope is 11

$$y + 4 = 11(x - 1)$$

$$y + 4 = 11x - 11$$

$$y = 11x - 15$$

y-intercept is -15

$$-11x + y = -15$$

$$11x - y = 15$$

3. (-3, -4) and (3, -2)

$$m = \frac{-4-(-2)}{-3-3}$$

$$= \frac{-2}{-6}$$

$$= \frac{1}{3}$$

Slope = $\frac{1}{3}$

$$y + 4 = \frac{1}{3}(x + 3)$$

$$y + 4 = \frac{1}{3}x + 1$$

$$y = \frac{1}{3}x - 3$$

y-intercept = -3

$$-\frac{1}{3}x + y = -3$$

$$-3(-\frac{1}{3}x + y) = -3(-3)$$

$$x - 3y = 9$$

Standard Equation of a Line

Slope-Intercept Formula

$$y = mx + b$$

What does m represent?

slope

What does b represent?

y-intercept

1.

$$y = -\frac{1}{3}x + 5$$

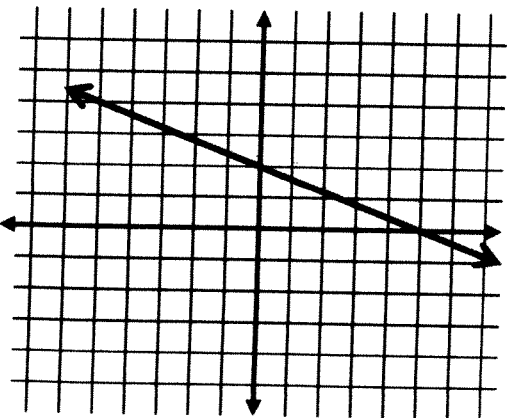
slope

$$-\frac{1}{3}$$

y-intercept

$$5$$

2.



slope

$$-\frac{2}{5}$$

y-intercept

$$-2$$

Explain, step by step, how you would find the slope and y intercept of the line that passes through the points (2,5) and (3,1). Graph the line and label the points and the y intercept.

$$(-1, 1) \quad (-2, 5)$$

$$m = \frac{5-1}{-2-1}$$

$$= \frac{-1}{-4}$$

$$= -4$$

$$y - 5 = -4(x + 2)$$

$$y - 5 = -4x - 8$$

$$y = -4x - 3$$

y-intercept

* the y-intercept is the point (0, -3)

1. First find the slope
2. Next use point slope formula to find the y-intercept
3. Plot the points

Slope-Intercept Formula

